Prevention of Significant Air Quality Deterioration Review

Preliminary Determination

December 2009

Facility Name: The Procter & Gamble Paper Products Company – Albany
City: Albany
County: Dougherty
AIRS Number: 04-13-095-00071
Application Number: 17646
Date Application Received: August 30, 2007, updated May 29, 2009

Review Conducted by:
State of Georgia - Department of Natural Resources
Environmental Protection Division - Air Protection Branch
Stationary Source Permitting Program

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SUMMARY

The Environmental Protection Division (EPD) has reviewed the application submitted by The Procter & Gamble Paper Products Company for a permit to authorize process improvements to the existing six paper machines at the Albany Georgia Plant. The proposed project will modify Paper Machines 1APM to 6APM, upgrade existing Yankee hood dryers 2AYD and 3AYD, install a new Yankee hood dryer 1AYD, and install new control devices 5DE2 and 6DE2. The objective of this paper machine project is to modify and upgrade the individual paper machine components to accommodate advances in paper making technology and to conduct various debottlenecking improvements. This project will result in a moderate speed increase for all the paper machines.

The proposed project will result in an increase in emissions from the facility. The sources of these increases in emissions include the Paper Machines 1APM to 6APM and the Yankee hood dryers 1AYD, 2AYD and 3AYD.

The modification of The Procter & Gamble Paper Products Company due to this project will result in an emissions increase in carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_X), particulate matter (PM), particulate matter less than 10 micrometers (PM_{10}), particulate matter less than 2.5 micrometers ($PM_{2.5}$), sulfur dioxide (SO_2), and volatile organic compounds (VOC). A Prevention of Significant Deterioration (PSD) analysis was performed for the facility for all pollutants to determine if any increase was above the "significance" level. The CO, NO_X, PM/PM_{10}, SO_2, and VOC emissions increase was above the PSD significant level threshold.

The Procter & Gamble Paper Products Company is located in Dougherty County, which is classified as "attainment" or "unclassifiable" for SO_2, $PM_{2.5}$, and PM_{10}, NO_X, CO, and ozone (VOC).

The EPD review of the data submitted by The Procter & Gamble Paper Products Company related to the proposed modifications indicates that the project will be in compliance with all applicable state and federal air quality regulations.

It is the preliminary determination of the EPD that the proposal provides for the application of Best Available Control Technology (BACT) for the control of CO, NO_X, PM/PM_{10}, SO_2 and VOC, as required by federal PSD regulation 40 CFR 52.21(j).

It has been determined through approved modeling techniques that the estimated emissions will not cause or contribute to a violation of any ambient air standard or allowable PSD increment in the area surrounding the facility or in Class I areas located within 200 km of the facility. It has further been determined that the proposal will not cause impairment of visibility or detrimental effects on soils or vegetation. Any air quality impacts produced by project-related growth should be inconsequential.

This Preliminary Determination concludes that an Air Quality Permit should be issued to The Procter & Gamble Paper Products Company for the modifications necessary to authorize process improvements to existing Paper Machines 1APM to 6APM, to install or upgrade Yankee hood dryers 1AYD, 2AYD and 3AYD, and to install new control devices 5DE2 and 6DE2 on Paper Machines 5APM and 6APM, which will have minimum PM control efficiencies of 90%. Various conditions have been incorporated into the current Title V operating permit to ensure and confirm compliance with all applicable air quality regulations. A copy of the draft permit amendment is included in Appendix A. This Preliminary Determination also acts as a narrative for the Title V Permit.

1.0 INTRODUCTION – FACILITY INFORMATION AND EMISSIONS DATA

On August 30, 2007, The Procter & Gamble Paper Products Company (hereafter P&G) submitted Application No. 17646 for an air quality permit to modify Paper Machines 1APM to 6APM, to upgrade existing Yankee hood dryers 2AYD and 3AYD, and to install a new Yankee hood dryer 1AYD. An update to Application No. 17646 was received by the Division on May 29, 2009. P&G is located at 512 Liberty Expressway Southeast in Albany, Dougherty County.

Table 1-1: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓	✓		
PM_{10}	✓	✓		
SO_2	✓	✓		
VOC	✓	✓		
NO_X	✓	✓		
CO	✓	✓		
TRS	N/A			
H_2S	N/A			
Individual HAP	✓	✓		
Total HAPs	✓	✓		

Table 1-2 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a review of the "Permit" file(s) on the facility found in the Air Branch office.

Table 1-2: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
2676-095-0071-V-02-0	2/13/2008	Renewal Title V Permit

Based on the proposed project description and data provided in the permit application, the estimated incremental increases of regulated pollutants from the facility are listed in Table 1-3 below:

Table 1-3: Emissions Increases from the Project

Pollutant	Baseline Years	Potential Emissions Increase (tpy)	PSD Significant Emission Rate (tpy)	Subject to PSD Review
PM	2001-2002	191	25	Yes
PM_{10}	2001-2002	191	15	Yes
VOC	2003-2004	729	40	Yes
NO_X	2001-2002	415	40	Yes
CO	2001-2002	229	100	Yes
SO_2	2001-2002	357	40	Yes
TRS	N/A	N/A	10	No
Pb	2001-2002	0.008	0.6	No
Fluorides	N/A	N/A	3	No
H_2S	N/A	N/A	10	No
SAM	N/A	N/A	7	No

The definition of baseline actual emissions is the average emission rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the facility within the 10-year period immediately proceeding the date a complete permit application was received by EPD. The net increases were calculated by subtracting the past actual emissions (based upon the annual average emissions from 24-month time period) from the future projected actual emissions of the modified equipment and associated emission increases from non-modified equipment. Table 1-4 details this emissions summary. The emissions calculations for Tables 1-3 and 1-4 can be found in detail in the facility's PSD application. (See the following tables in the PSD Review Documentation: Table 4 in original application and Tables 3R & 5R in application update).

The facility's emissions calculations include the six Paper Machines (Source Codes: 1APM, 2APM, 3APM, 4APM, 5APM, 6APM) that will be modified as part of the project and the Yankee hood burners 1AYD, 2AYD and 3AYD. This calculation also includes the paper machines burners 1APD, 2APD, 3APD, 4APD, 4AYD, 5APD, 5AYD, 6APD and 6AYD, Boilers B001, B002 and B003, and the converting operations (Source Code: CONV). None of these emissions units will be modified under this project. However, these emission units are included because some are located downstream and they may experience debottlenecking as a result of the modification of paper machine equipment. Therefore, all of these emissions units can contribute to an increase in emissions and are included in the emissions calculations as required by 40 CFR 52.21 requirements.

These calculations have been reviewed and approved by the Division. Georgia EPD is following EPA's guidance in using PM_{10} as a surrogate for $PM_{2.5}$ until final $PM_{2.5}$ NSR implementation rules are adopted.

Table 1-4: Net Change in Emissions Due to the Major PSD Modification

Pollutant	Increase from Modified Equipment		Associated Units Increase (tpy)	Total Increase (tpy)
	Past Actual	Future Actual		
PM/PM_{10}	255	446	N/A	191
VOC	209	938	N/A	729
NO_X	1276	1691	N/A	415
CO	1259	1488	N/A	229
SO_2	41	398	N/A	357
TRS	N/A	N/A	N/A	N/A
Pb	0.041	0.049	N/A	0.008
Fluorides	N/A	N/A	N/A	N/A
H_2S	N/A	N/A	N/A	N/A
SAM	N/A	N/A	N/A	N/A

Based on the information presented in Tables 1-3 and 1-4 above, P&G's proposed modification, as specified per Georgia Air Quality Application No. 17646, is classified as a major modification under PSD because the potential emissions of CO exceed the PSD significant threshold of 100 tons per year, the potential emissions of NO_X, SO_2, and VOC each exceed the PSD significant rate of 40 tons per year, and the potential emissions of PM/PM_{10} exceed the PSD significant threshold of 25/15 tons per year.

Through its new source review procedure, EPD has evaluated P&G's proposal for compliance with State and Federal requirements. The findings of EPD have been assembled in this Preliminary Determination.

2.0 PROCESS DESCRIPTION

According to Application No. 17646, P&G has proposed to modify Paper Machines 1APM to 6APM, to upgrade existing Yankee hood dryers 2AYD and 3AYD, to install a new Yankee hood dryer 1AYD, and to install new control devices 5DE2 and 6DE2. The objective of this paper machine project is to modify and to upgrade the individual paper machine components to accommodate advances in paper making technology and to conduct various debottlenecking improvements.

The papermaking process consists of stock preparation, paper forming and drying, and parent roll winding. The stock preparation activity consists of mixing pulp, water, and additives to generate slurry. The pulp/water slurry is sprayed onto a moving belt that passes through the pre-dryer and Yankee hood drying zones. The pre-dryer and Yankee hood burners are direct fired units where combustion products are mixed with the adequate amounts of fresh and recycled air to keep the temperature of the drying gases at an acceptable level. The hot air containing combustion products passes through the paper web and exhausts with the paper making emissions through the process stacks. The dried paper web exiting at the dry end part of the paper machine is wound onto large rolls for transfer to the converting area. The paper making process also entails spraying of softening solutions on to the paper web. Steam generated by three boilers at the plant is also utilized in the paper machines for web drying.

In the converting area, the paper on the parent roll is unwound and converted into the final product. The converting process includes unwinding of parent rolls, rerolling onto cores, printing (if necessary), and packaging. Converting operations are carried out in an area separate from the paper machine locations.

The primary equipment at this facility associated with the paper making operations includes six paper machines (Source Codes: 1APM to 6APM), associated predryer (Source Codes: 1APD to 6APD) and Yankee hood burners (Source Codes: 1AYD to 6AYD), converting equipment (Source Code: CONV) and three boilers (Source Codes: B001, B002, B003). All paper machines, except Paper Machine 1APM, at this plant are already equipped with a predryer burner and a Yankee hood burner. Paper Machine 1APM only has a pre-dryer burner 1APD installed.

This paper machine project includes the installation of a new Yankee hood burner (Source Code: 1AYD) that will serve 1APM and the modification to upgrade two existing Yankee hood burners (Source Codes: 2AYD, 3AYD) serving Paper Machines 2APM and 3APM. Yankee burners 1AYD, 2AYD, and 3AYD will be designed for natural gas and liquefied petroleum gas (LPG) firing and will have a maximum heat input rating of 95 million Btu per hour (mmBtu/hr) each.

This facility also proposes to conduct miscellaneous debottlenecking and process improvement modification activities for the six paper machines (Source Codes: 1APM to 6APM). The implementation of this proposed project will result in moderate speed increases of the paper machines. As part of this modification, the facility plans to install a new repulper stack (Stack Codes: 1ARP to 6ARP) on each paper machine (See page 15, Table 1, of the PSD Review Documentation). Dry end emissions from Paper Machines 1APM to 6APM are currently controlled by Venturi Scrubbers 1AVS to 6AVS. Paper Machines 5APM and 6APM also have cyclonic separators installed to control emissions from the former stacks. To reduce PM emissions from the Predryer/Yankee Area Exhausts of Paper Machines 5APM and 6APM, this project also includes the installation of two new control devices (Source Codes: 5DE2 and 6DE2), which will have minimum PM control efficiencies of 90%, as well as the installation of two new stacks for each paper machine.

Upon implementation of this project, P&G plans to comply with the emission limits contained in the current Part 70 operating permit. The facility is not requesting any increase in current emission limits for any pollutants. The facility believes that a PSD applicability review for this project is required to account strictly for the emissions increases attributable to the future operating capacity corresponding to the unrestricted operation of the these sources on an annual basis.

The P&G permit application and supporting documentation are included in Appendix A of this Preliminary Determination and can be found online at www.georgiaair.org/airpermit.

3.0 REVIEW OF APPLICABLE RULES AND REGULATIONS

State Rules

Georgia Rule for Air Quality Control (Georgia Rule) 391-3-1-.03(1) requires that any person prior to beginning the construction or modification of any facility which may result in an increase in air pollution shall obtain a permit for the construction or modification of such facility from the Director upon a determination by the Director that the facility can reasonably be expected to comply with all the provisions of the Act and the rules and regulations promulgated thereunder. Georgia Rule 391-3-1-.03(8)(b) continues that no permit to construct a new stationary source or modify an existing stationary source shall be issued unless such proposed source meets all the requirements for review and for obtaining a permit prescribed in Title I, Part C of the Federal Act [i.e., Prevention of Significant Deterioration of Air Quality (PSD)], and Section 391-3-1-.02(7) of the Georgia Rules (i.e., PSD).

Georgia Rule 391-3-1-.02(2)(b) limits opacity from any Paper Machine stack (Source Codes: 1APM to 6APM) to 40 percent. However, Georgia Rule (b) is subsumed by a more stringent BACT limit of 20 percent opacity for any Paper Machine stack.

The Paper Machine Predryer Burners (Source Codes: 1APD to 6APD) and the Yankee Burners (Source Codes: 1AYD to 6AYD) are not subject to Georgia Rule 391-3-1-.02(2)(d) because they are classified as direct-fired burners and they do not meet the definition of fuel burning units. Georgia Rule (d) limits particulate emission from any fuel burning equipment. Visible emissions from Boilers B001, B002 and B003 are limited per Georgia Rule 391-3-1-.02(2)(d)(3) to 20 percent except for one six minute period per hour of not more than 27 percent opacity.

Georgia Rule 391-3-1-.02(2)(e) limits particulate matter emissions from any Paper Machine stack (Source Codes: 1APM to 6APM) by the Rule (e) allowable equation. However, all the Paper Machines are subject to more stringent BACT limits, which subsume the Georgia Rule (e) limit. The PM limits for each Paper Machine are listed in existing Condition 3.3.5, and they are as follows:

Paper Machine	All Paper Machine Stacks	Particulate Matter (lbs/hr)
1APM	Former, Process and Dry End stacks	17.19
2APM	Former, Process and Dry End stacks	16.72
3APM	Former, Process and Dry End stacks	19.46
4APM	Former, Process and Dry End stacks	19.17
5APM	Former, Process and Dry End stacks	13.89
6APM	Former, Process and Dry End stacks	15.36

Georgia Rule 391-3-1-.02(2)(g)2 limits the sulfur content of any fuel consumed in Paper Machine Burners 1AYD, 2AYD, 3AYD, 4AYD, 5APD and 6APD to not equal or exceed 2.5 percent sulfur, by weight because each of these burners is rated at a heat capacity less than 100 mmBtu/hr. Georgia Rule 391-3-1-.02(2)(g)2 also limits the sulfur content of any fuel consumed in Boilers B001 and B002 and Paper Machine Burners 1APD, 2APD, 3APD, 4APD, 5AYD and 6AYD to not equal or exceed 3.0 percent sulfur, by weight, because each of these burners is rated at a heat capacity greater than 100 mmBtu/hr. However, Georgia Rule (g) is subsumed by a more stringent BACT limit of 0.34 percent, by weight, sulfur for Boilers B001 and B002 and Paper Machine Burners 1APD, 2APD, 3APD, 4APD and 4AYD.

This facility is subject to Georgia Rule 391-3-1-.02(2)(mm), "VOC Emissions from Graphic Arts Systems." Georgia Rule (mm) is applicable to all the associated converting and printing operations. However, this rule is subsumed by a more stringent PSD requirement for the Paper Machines 1APM to 6APM and Emission Unit CONV. The facility has agreed to not exceed an average of 3 percent by weight of volatile organic compounds from the volatile organic compound containing materials used in Paper Machines 1APM through 6APM and process group CONV per twelve consecutive months.

Federal Rule - PSD

The regulations for PSD in 40 CFR 52.21 require that any new major source or modification of an existing major source be reviewed to determine the potential emissions of all pollutants subject to regulations under the Clean Air Act. The PSD review requirements apply to any new or modified source, which belongs to one of 28 specific source categories having potential emissions of 100 tons per year or more of any regulated pollutant, or to all other sources having potential emissions of 250 tons per year or more of any regulated pollutant. They also apply to any modification of a major stationary source which results in a significant net emission increase of any regulated pollutant.

Georgia has adopted a regulatory program for PSD permits, which the United States Environmental Protection Agency (EPA) has approved as part of Georgia's State Implementation Plan (SIP). This regulatory program is located in the Georgia Rules at 391-3-1-.02(7). This means that Georgia EPD issues PSD permits for new major sources pursuant to the requirements of Georgia's regulations. It also means that Georgia EPD considers, but is not legally bound to accept, EPA comments or guidance. A commonly used source of EPA guidance on PSD permitting is EPA's Draft October 1990 New Source Review Workshop Manual for Prevention of Significant Deterioration and Nonattainment Area Permitting (NSR Workshop Manual). The NSR Workshop Manual is a comprehensive guidance document on the entire PSD permitting process.

The PSD regulations require that any major stationary source or major modification subject to the regulations meet the following requirements:

- Application of BACT for each regulated pollutant that would be emitted in significant amounts;
- Analysis of the ambient air impact;
- Analysis of the impact on soils, vegetation, and visibility;
- Analysis of the impact on Class I areas; and
- Public notification of the proposed plant in a newspaper of general circulation

Definition of BACT

The PSD regulation requires that BACT be applied to all regulated air pollutants emitted in significant amounts. Section 169 of the Clean Air Act defines BACT as an emission limitation reflecting the maximum degree of reduction that the permitting authority (in this case, EPD), on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such a facility through application of production processes and available methods, systems, and techniques. In all cases BACT must establish emission limitations or specific design characteristics at least as stringent as applicable New Source Performance Standards (NSPS). In addition, if EPD determines that there is no economically reasonable or technologically feasible way to measure the emissions, and hence to impose and enforceable emissions standard, it may require the source to use a design, equipment, work practice or operations standard or combination thereof, to reduce emissions of the pollutant to the maximum extent practicable.

EPA's NSR Workshop Manual includes guidance on the 5-step top-down process for determining BACT. In general, Georgia EPD requires PSD permit applicants to use the top-down process in the BACT analysis, which EPA reviews. The five steps of a top-down BACT review procedure identified by EPA per BACT guidelines are listed below:

Step 1: Identification of all control technologies;
Step 2: Elimination of technically infeasible options;
Step 3: Ranking of remaining control technologies by control effectiveness;
Step 4: Evaluation of the most effective controls and documentation of results; and
Step 5: Selection of BACT.

The following is a discussion of the applicable federal rules and regulations pertaining to the equipment that is the subject of this preliminary determination, which is then followed by the top-down BACT analysis.

New Source Performance Standards - 40 CFR 60 Subpart Db

The Paper Machine Yankee Burners (Source Codes: 1AYD to 6AYD) and the Predryer Burners (Source Codes: 1APD to 6APD) are not subject to any NSPS standard for steam generating units because they are classified as direct-fired burners and they do not meet the definition of fuel burning units.

Boiler B003 was installed in 1996 and it is subject to 40 CFR 60 Subject Db – "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units". This boiler is rated at a capacity of 175 mmBtu/hour and it fires natural gas and liquefied petroleum gas. All the Subpart Db requirements have already been included in the Renewal Title V Permit for Boiler B003. However, none of the three boilers at this plant (Boilers B001, B002 and B003) will undergo any physical modification as part of this paper machine modification project.

National Emissions Standards For Hazardous Air Pollutants – 40 CFR 63 Subpart JJJJ

This facility is classified as an existing major source for Hazardous Air Pollutants (HAPs). This facility emits more than 25 tons per year of combined HAPs and more than 10 tons per year of single HAP (primarily methanol, hexane and hydrochloric acid). This facility is subject to 40 CFR 63 Subpart JJJJ – "National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating".

The application of tissue softening solution to paper web on Paper Machines (Source Codes 1APM to 6APM) is subject to the requirements of 40 CFR 63 Subpart JJJJ. However, the coatings and glues currently employed by this process contain no hazardous air pollutants. The facility has limited the HAP emissions of any inks or materials used in the applicable web coating operations at the facility to a monthly average of no more than 4 percent or 0.04 kg organic HAP per kg of all coating materials used.

This paper machine modification project will not require the facility to exceed the four percent HAPs limit. The facility will continue to comply with the existing limit in Condition 3.3.15.

State and Federal – Startup and Shutdown and Excess Emissions

Excess emission provisions for startup, shutdown, and malfunction are provided in Georgia Rule 391-3-1-.02(2)(a)7. Excess emissions from the Paper Machines 1APM to 6APM and Yankee Burners 1AYD, 2AYD and 3AYD associated with the proposed project would most likely results from a malfunction of the associated control equipment. The facility cannot anticipate or predict malfunctions. However, the facility is required to minimize emissions during periods of startup, shutdown, and malfunction.

Federal Rule – 40 CFR 64 – Compliance Assurance Monitoring

Under 40 CFR 64, the Compliance Assurance Monitoring Regulations (CAM), facilities are required to prepare and submit monitoring plans for certain emission units with the Title V application. The CAM Plans provide an on-going and reasonable assurance of compliance with emission limits. Under the general applicability criteria, this regulation applies to units that use a control device to achieve compliance with an emission limit and whose pre-controlled emissions levels exceed the major source thresholds under the Title V permitting program. Although other units may potentially be subject to CAM upon renewal of the Title V operating permit, such units are not being modified under the proposed project and need not be considered for CAM applicability at this time.

Therefore, this applicability evaluation only addresses Yankee Burners 1AYD through 3AYD and Paper Machines 1APM through 6APM.

Yankee Burners 1AYD through 3AYD do not employ any air pollution control devices. Therefore, the CAM requirements are not triggered by the proposed paper machine project.

Paper Machines 1APM through 6APM employ Venturi Scrubber 1AVS through 6AVS to control dry end PM emissions. Paper Machines 5APM and 6APM also employ Cyclonic Separators 5ACS and 6ACS to control PM emissions from the wet process, particularly from the former stack of each paper machine. This project proposes the installation of two new control devices 5DE2 and 6DE2 to control PM emissions from the Predryer/Yankee Area Exhausts of Paper Machines 5APM and 6APM. Both 5DE2 and 6DE2 will have minimum control efficiencies of 90%.

For Paper Machines 1APM through 4APM, P&G has submitted CAM Plans that describe the general and performance criteria for two performance indicators, flow rate and differential pressure. For Paper Machines 5APM and 6APM, P&G has submitted CAM Plans that describe the general and performance criteria for three performance indicators, flow rate and differential pressure for the Venturi Scrubbers and visible emissions for the Cyclonic Separators. The aforementioned CAM Plans have already been incorporated into the Renewal Title V Permit, and the facility is currently subject to the CAM requirements in accordance with existing Conditions 5.2.5, 5.2.9, and 5.2.10. No changes to the existing CAM requirements will be required as a result of the proposed paper machine project.

For Paper Machines 5APM and 6APM, new Condition 3.3.27 requires P&G to submit a CAM Plan for the respective new control device, 5DE2 or 6DE2, within 90 days prior to commencement of operation of the respective modified paper machine. The CAM Plan for the new control device, 5DE2 or 6DE2, will be incorporated into the Title V Permit at such time.

4.0 CONTROL TECHNOLOGY REVIEW

The proposed project will result in emissions that are significant enough to trigger PSD review for the CO, NO_X, SO_2, PM/PM_{10} and VOC. Paper Machines 1APM to 6APM and Yankee Burners 1AYD, 2AYD, and 3AYD are subject to a BACT analysis because they will be physically modified and/or experience a change in the method of operation.

Please note that the Paper Machine Predryer Burners (Source Codes: 1APD, 2APD, 3APD, 4APD, 5APD, and 6APD) and the Yankee Burners (Source Codes: 4AYD, 5AYD, 6AYD), the converting operations (Source Code: CONV) and the three plant boilers (Source Codes: B001, B002, B003) will not be physically modified or experience a change in the method of operation. Emissions from these pieces of equipment have been included in the calculations to determine PSD applicability; however, these emissions units are not subject to a BACT review as they are only considered “affected units” and not “modified units”.

<u>Paper Machine Yankee Burners 1AYD, 2AYD, and 3AYD - Background</u>

The Yankee Burners 1AYD, 2AYD, and 3AYD are direct-fired duct burners that will combust natural gas and liquefied petroleum gas as a backup fuel. Each of theses burners will be installed or upgraded to a heat capacity of 95 mmBtu/hr. The heat generated by each of the direct-fired Yankee hood burner is imparted to a large amount of air by direct mixing. This heated air is utilized for drying the paper web. These burners do not currently have any air pollution control devices installed. The facility has submitted a BACT review for CO, NO_X and SO_2 emissions from the Yankee Burners 1AYD, 2AYD and 3AYD.

<u>Yankee Burners 1AYD, 2AYD and 3AYD – CO Emissions</u>

<u>Applicant’s Proposal</u>
(Please refer to page 34-37 in the Revised BACT Report)

Step 1: Identify all control technologies

The CO emissions control technologies for a direct-fired burner include the following:

- Burner design (duct burner, furnace)
- Fuel selection (natural gas, LPG, No. 2 fuel oil, fossil fuels)
- Good combustion practices (combustion temperature control, excess air operation, burner tuning)
- Post combustion control (catalytic based systems, SCONOx, XONON)

Step 2: Eliminate technically infeasible options

Post-combustion controls are technically infeasible for controlling CO emissions from the Yankee Burners 1AYD, 2AYD, and 3AYD for two main reasons. The first issue is the very low concentration of CO in the process stack exhaust stream. The recent CO concentration data for this plant’s paper machine stacks indicate a maximum CO concentration to be consistently below 30 ppm. The post-combustion controls are generally applicable to exhaust streams with CO concentrations in excess of 200 ppm. The second reason for technical infeasibility of the post-combustion controls is the presence of dust and moisture in the exhaust stream. Dust and moisture lead to blinding and fouling of the catalyst media in the post-combustion systems making them ineffective. Also, the papermaking process involves the use of additives containing a large variety of chemical constituents, whose impact on the catalyst media is unknown. Therefore, post combustion controls are deemed technically infeasible.

Step 3: Ranking the Remaining Control Technologies by Control Effectiveness

Burner design, fuel selection, and good combustion practices are determined to be technically feasible control technologies for controlling CO emissions from the Yankee Burners 1AYD, 2AYD and 3AYD. The burner design is ranked as the highest option for minimizing CO emissions, followed by the fuel selection option, and the good combustion practices option.

Step 4: Evaluating the Most Effective Controls and Documentation

The most effective CO control strategy for the Yankee Burners 1AYD, 2AYD and 3AYD consists of a combination of the three technically feasible control measures. This strategy will include the use of a low CO burner design, use of natural gas (and LPG as backup fuel), and good combustion practices.

Step 5: Selection of BACT

The facility proposes a BACT CO emission limit of 14.25 pounds per hour (or 0.15 lb/mmBtu heat input) for each of the Yankee Burners 1AYD, 2AYD, and 3AYD.

EPD Review – CO Control

The Division agrees with the facility's BACT CO limit based on the review done from the RBLC database. The proposed BACT CO emission limit is 14.25 pounds per hour (or 0.15 lb/mmBtu heat input) for each of the Yankee Burners 1AYD, 2AYD and 3AYD. The P&G Albany Plant shall meet the proposed CO limit for the Yankee Burners 1AYD, 2AYD and 3AYD by a combination of low CO burner design, use of natural gas, and good combustion practices. The Division's review shows that this CO BACT limit is more stringent than the limit specified for the two other P&G Plants located in Wisconsin and in Missouri. Both the Wisconsin Plant and Missouri Plant have had a BACT CO limit of 0.173 lbs/mmBtu.

Conclusion – CO Control

The BACT selection for the Yankee Burners 1AYD, 2AYD and 3AYD is summarized below in

Table 4-1: BACT Summary for the Yankee Burners 1AYD, 2AYD, and 3AYD

Pollutant	Control Technology	Proposed BACT Limit	Averaging Time	Compliance Determination Method
CO	Good combustion practices, low CO burner, and use of natural gas (and LPG as backup fuel)	14.25 lbs/hr	3 hours	Initial performance testing with quarterly monitoring testing

Yankee Burners 1AYD, 2AYD, and 3AYD –NO_X Emissions

Applicant's Proposal

(Please refer to page 37-41 in the Revised BACT Report)

Step 1: Identify all control technologies

The NO_X emissions control technologies for a direct-fired burner include the following:

- Burner design (duct burner, furnace)
- Fuel selection (natural gas, LPG, No. 2 fuel oil, fossil fuels)
- Good combustion practices (combustion temperature control, excess air operation, burner tuning)
- Post combustion control, such as Selective Catalytic Reduction (SCR) and Selective Non Catalytic Reduction (SNCR)

Step 2: Eliminate technically infeasible options

Post-combustion controls are technically infeasible for controlling NO_X emissions from the Yankee Burners 1AYD, 2AYD, and 3AYD for two main reasons. The first issue is the very low concentration of NO_X in the process stack exhaust stream. The recent NO_X concentration data for this plant's paper machine stacks indicate a maximum NO_X concentration to be consistently below 10 ppm. The post-combustion controls are generally applicable to exhaust streams with NO_X concentrations in excess of 200 ppm. The SCR and SNCR technologies are infeasible because the temperature of the process stack exhaust stream, which is 300° F, is not within the desired design temperature range of the SCR system (550° F to 750° F) or SNCR system (1,400° F to 2,000° F). Therefore, the SCR system and the SNCR system are technically infeasible for the Yankee Burners 1AYD, 2AYD and 3AYD.

Step 3: Ranking the Remaining Control Technologies by Control Effectiveness

Burner design, fuel selection, and good combustion practices are determined to be technically feasible control technologies for controlling NO_X emissions from the Yankee Burners 1AYD, 2AYD and 3AYD. The burner design is ranked as the highest option for minimizing NO_X emissions, followed by the fuel selection option, and the good combustion practices option.

Step 4: Evaluating the Most Effective Controls and Documentation

The most effective NO_X control strategy for the Yankee Burners 1AYD, 2AYD and 3AYD consists of a combination of the three technically feasible control measures. This strategy will include the use of a low NO_X burner design, use of natural gas (and LPG as backup fuel), and good combustion practices.

Step 5: Selection of BACT

The facility proposes a BACT NO_X emission limit of 9.5 pounds per hour (or 0.10 lb/mmBtu heat input) for each of the Yankee Burners 1AYD, 2AYD, and 3AYD.

EPD Review – NO_X Control

The Division agrees with the facility's BACT NO_X limit based on the review done from the RBLC database. The proposed BACT NO_X emission limit is 9.5 pounds per hour (or 0.10 lb/mmBtu heat input) for each of the Yankee Burners 1AYD, 2AYD and 3AYD. The P&G Albany Plant shall meet the proposed NO_X limit for the Yankee Burners 1AYD, 2AYD and 3AYD by a combination of low NO_X burner design, use of natural gas, and good combustion practices. The Division's review shows that this NO_X BACT limit is more stringent than the limit specified for the two other P&G Plants located in Wisconsin and in Missouri. Both the Wisconsin Plant and Missouri Plant have had a BACT NO_X limit of 0.115 lbs/MMBtu.

Conclusion – NO_X Control

The BACT selection for the Yankee Burners 1AYD, 2AYD, and 3AYD is summarized below in

Table 4-2: BACT Summary for the Yankee Burners 1AYD, 2AYD and 3AYD

Pollutant	Control Technology	Proposed BACT Limit	Averaging Time	Compliance Determination Method
NO_X	Good combustion practices, low NO_X burner, and use of natural gas (and LPG as backup fuel)	9.5 lbs/hr	3 hours	Initial performance testing with quarterly monitoring testing

Yankee Burners 1AYD, 2AYD, and 3AYD – SO_2 Emissions

Applicant's Proposal
(Please refer to page 48-49 in the Revised BACT Report)

Step 1: Identify all control technologies

The facility identifies that fuel use strategy is the most common control technology to minimize SO_2 emissions. The fuels fired in the burner can include natural gas, LPG, No. 2 fuel oil and fossil fuels.

Step 2: Eliminate technically infeasible options

The facility states that the use of natural gas is the only available control technology to minimizing SO_2 emissions from the Yankee Burners 1AYD, 2AYD and 3AYD.

Step 3: Ranking the Remaining Control Technologies by Control Effectiveness

The facility states that the use of natural gas is the only available control technology for SO_2. A review of the EPA's AP42 emission factors indicates that the combustion of natural gas results in the lowest SO_2 emissions in comparison with other fuels, such as fuel oil and fossil fuels.

Step 4: Evaluating the Most Effective Controls and Documentation

Firing of natural gas in the Yankee Burners 1AYD, 2AYD, and 3AYD is the most effective control strategy for SO_2.

Step 5: Selection of BACT

The facility proposes to fire natural gas in the Yankee Burners 1AYD, 2AYD and 3AYD to minimize SO_2 emissions. LPG can only be fired as a backup fuel in these burners.

EPD Review – SO_2 Control
The Division agrees with the facility's BACT SO_2 control strategy. No fuel oil shall be fired in Yankee Burners 1AYD, 2AYD and 3AYD.

Conclusion – SO_2 Control
The BACT selection for the Yankee Burners 1AYD, 2AYD and 3AYD is summarized below in

Table 4-3: BACT Summary for the Yankee Burners 1AYD, 2AYD and 3AYD

Pollutant	Control Technology
SO_2	Use of Natural gas (and LPG as a backup fuel)

Paper Machines 1APM, 2APM, 3APM, 4APM, 5APM and 6APM - Background

The paper making process requires large amounts of air for removing moisture and dust released during the process. The air utilized in the paper making process is primarily discharged from three locations on the paper machine: former/wet end, drying process, and the dry end. The generation of PM in the paper making process is inversely proportional to the moisture content of the web and is highest at the dry end. The dry end part of the paper machine is estimated to account for over 50 percent of the total PM emissions released by the paper making process. Each paper machine (Source Codes: 1APM to 6APM) is equipped with a venturi scrubber to PM control on the dry end. In addition to the venturi scrubbers, Paper Machines 5APM and 6APM are also equipped with wet end cyclonic separators to control emissions from the former/wet end stacks. This paper machine project also proposes the installation of two new control devices 5DE2 and 6DE2, which will have minimum PM control efficiencies of 90%, to control PM emissions from the Predryer/Yankee Area Exhausts of Paper Machines 5APM and 6APM.

The paper making process at this plant uses various additives that contain VOC. The VOC are released from the paper machine stacks as paper is formed and dried. Therefore, the facility has submitted a BACT review for PM and VOC emissions from the Paper Machines (Source Codes: 1APM to 6APM).

Paper Machines 1APM, 2APM, 3APM, 4APM, 5APM and 6APM – PM Emissions

Applicant's Proposal
(Please refer to page 41-48 in the Revised BACT Report)

Step 1: Identify all control technologies

The PM emissions add-on control technologies for a paper machine include the following:

- Fabric filter collector or baghouse
- Electrostatic static precipitator (ESP)
- Venturi scrubbers

Step 2: Eliminate technically infeasible options

The facility states that fabric filter and ESP are technically infeasible options for the paper machines.

For the fabric filter technology, the key gas stream characteristics that require consideration are moisture and corrosivity. The presence of moisture in the gas stream adversely affects the filtration capability of the fabric media. The moisture can also cause material failures due to corrosion. The baghouse unit and associated ductwork must be insulated and possibly heated if the gas stream contains moisture. Both the structural and fabric components may be damaged due to moisture and corrosiveness of the gas stream. Additionally, the temperature of the pollutant stream to be filtered must remain above the dew point of any condensable matter in the stream. The former and process stack exhaust streams contain significant amount of moisture because the function of these streams is to remove moisture contained in the paper web. There are no current fabric filter systems to control PM emissions from any papermaking sources. Because of lack of technical data, operating experience, and potential moisture issues, fabric filter system is not technically feasible to control PM emissions from the paper machines.

A key variable determining the applicability of the ESP is the electrical conductivity of the particles that are being collected. The performance and power consumption of an ESP is directly dependent upon the electrical conductivity of the particles. Similar to a fabric filter system, moisture in the gas stream can also affect the performance of the ESP. The corrosion failure of components is one of the main concerns for installing an ESP system. There are no current ESP systems to control PM emissions from any papermaking sources. Therefore, the electrical conductivity and moisture issues make the ESP technology infeasible to control PM emissions from the paper machines.

Step 3: Ranking the Remaining Control Technologies by Control Effectiveness

The venturi scrubber system is a technically feasible option to control PM emissions from the paper machines. The venturi scrubber systems have a PM control efficiency of 99 percent.

Step 4: Evaluating the Most Effective Controls and Documentation

The facility states that the venturi scrubber system is the most effective control option to limit PM emissions from the dry end of the paper machines. For the wet end of the paper machine, the facility has done a cost analysis to determine the feasibility of a venturi scrubber system to control emissions from the former and the process stacks for each paper machine. The cost analysis is included in Tables 8-28 (Please refer to pages 57-77 in the Revised BACT Report). The cost analysis shows that installing a venturi scrubber system on the former and process stacks will cost between $23,800 per ton to $32,600 per ton. The cost per pollutant removed is high because the concentrations of PM in the exhaust stream for the former and the process stacks are usually low.

The RBLC database also shows that no similar plant or any P&G paper making plants have had venturi scrubber systems installed to control PM emissions from the wet end of the process. Therefore, the facility concludes that installing the venturi scrubber system for the former and process stacks is cost prohibitive. However, P&G does conclude that installing a venturi scrubber system is the most effective control option to control PM emissions from the dry end of the paper machines.

Step 5: Selection of BACT

The facility proposes a BACT PM emission limit for each paper machine for all the combined stacks (former, process, repulper, dry end, roof exhaust and yankee/predryer burner stacks) as follows:

Paper Machine	Particulate Matter (lbs/hr)
1APM	17.19
2APM	16.72
3APM	19.46
4APM	19.17
5APM	13.89
6APM	15.36

EPD Review – PM Control

The Division agrees with the facility's BACT PM limit based on the review done. The BACT PM limits proposed in this project for Paper Machines 1APM, 2APM, 3APM, and 4APM are equivalent to previously established BACT PM limits. To comply with the PM_{10} increment consumption concentration for the 24-hour averaging period, the BACT PM limits proposed in this project for Paper Machines 5APM and 6APM were decreased from previously established BACT PM limits. The BACT PM limit for 5APM was reduced to 13.89 lb/hr from 16.12 lb/hr, and the BACT PM limit for 6APM was reduced to 15.36 lb/hr from 17.15 lb/hr.

The Division has conducted independent research from the RBLC database to determine the BACT control technology for similar sources. The database shows that there are two other similar P&G plants located in Wisconsin and in Missouri. Both of these plants have wet scrubbers installed for the dry end of the paper machines. No venturi scrubbers are installed to control PM emissions from the former and process stacks. Only in one instance, a cyclonic separator is installed for one of the three paper machines at the Wisconsin plant to control emissions from the wet end of the process (i.e. the former stack). In comparison, P&G Albany plant already has cyclonic separators installed on the former stacks of Paper Machines 5APM and 6APM. This paper machine project also proposes the installation of two new control devices with PM control efficiencies of 90% to control the PM emissions from the Predryer/Yankee Area Exhausts of Paper Machines 5APM and 6APM. Therefore, the Division has concluded that the six venturi scrubbers on Paper Machines 1APM to 6APM as well as the two cyclonic separators and the two new control devices on Paper Machines 5APM and 6APM constitute as BACT control strategy for PM emissions.

<u>Conclusion – PM Control</u>
The BACT selection for the Paper Machines 1APM to 6APM is summarized below in Table 4-4:

Table 4-4: BACT Summary for the Paper Machines 1APM to 6APM

Pollutant	Control Technology	Paper Machine	Proposed BACT Limit	Compliance Determination Method
PM	Venturi Scrubber on dry end stack	1APM	17.19 lbs/hr	Initial and periodic testing
PM	Venturi Scrubber on dry end stack	2APM	16.72 lbs/hr	Initial and periodic testing
PM	Venturi Scrubber on dry end stack	3APM	19.46 lbs/hr	Initial and periodic testing
PM	Venturi Scrubber on dry end stack	4APM	19.17 lbs/hr	Initial and periodic testing
PM	Venturi Scrubber on dry end stack, Cyclonic Separator on former stack, New Control Device 5DE2 (Control Efficiency ≥ 90%)	5APM	13.89 lbs/hr	Initial and periodic testing
PM	Venturi Scrubber on dry end stack, Cyclonic Separator on former stack New Control Device 6DE2 (Control Efficiency ≥ 90%)	6APM	15.36 lbs/hr	Initial and periodic testing

<u>Paper Machines 1APM, 2APM, 3APM, 4APM, 5APM and 6APM – VOC Emissions</u>

<u>Applicant's Proposal</u>
(Please refer to page 49-54 in the Revised BACT Report)

Step 1: Identify all control technologies

The VOC emissions control technologies for a paper machine include the following:

- Inherent lower-emitting process practices
- Carbon adsorption
- Condensation
- Absorption
- Thermal incineration
- Catalytic incineration

Step 2: Eliminate technically infeasible options

The facility estimated that VOC concentrations are estimated to be less than 25 ppm from the paper machine stacks. Therefore, the facility states that the carbon adsorption, condensation, absorption, catalytic incineration are technically infeasible options to control VOC emissions from the paper machines because the exhaust process stacks have low VOC concentrations. Each of these units, with the exception of thermal incineration, generates a waste stream that requires disposal in an environmentally acceptable manner. The carbon adsorption, condensation, and absorption systems are also relatively complex, and the space requirements for each of these systems is much greater than the thermal incineration unit.

These control technologies are described in more detail as follows, as well as their feasibility for paper machine sources:

Carbon Adsorption

In a typical carbon adsorption system, the VOC gas stream is passed via a filter to collect particulate matter and then through a cooler or a dehumidifier. The gas stream is then contacted with a bed of the sorbent material, usually a fixed bed of granular activated carbon. The VOC is adsorbed from the gas stream and the clean gas leaves the sorbent bed. When the sorbent bed is exhausted (i.e., when the VOC concentration in the outlet gas stream exceeds a maximum acceptable level), the bed is taken off-line for regeneration, and the VOC containing gas stream is diverted to a fresh (regenerated) sorbent bed. For continuous VOC removal, at least two and perhaps more sorbent beds operating in parallel are required.

Regeneration of the spent sorbent can be done on-site or by a for-fee regeneration service. The most common method of regeneration is by low-pressure steam. If an inert gas is used to regenerate the bed, then the VOC may be recovered by condensation of the VOC from the concentrated regenerating gas stream, or may be oxidized. If steam is used, heat released by condensation of the steam causes VOC to desorb from the sorbent and the resulting vapor mixture is condensed downstream of the sorbent bed. The condensed liquid is allowed to separate into two phases. The recovered VOC is then decanted and is available for reuse or must be disposed. The aqueous phase must be sent to waste water treatment. Based on these reasons and the fact that other add-on control options perform the same (i.e., 95% control efficiency), carbon adsorption is not considered a technically feasible control option and, consequently, costs are not estimated.

Condensation

Condensation is a heat exchange process in which the VOC containing gas is cooled to below the dew point temperature of the VOC to a liquid. The condensation temperature is generally the temperature at which the vapor pressure of the VOC is 1 mm of Hg or less. The temperature range for cooling water is 80ºF to 100 °F. If the VOC condenses at a temperature less than this, then refrigeration must be used. Because the entire gas stream must be cooled to condense the VOC, energy costs are prohibitive if the VOC concentration is low. Below about 5,000 ppm, recovery by condensation is not usually practical. If the dew point of the inlet gas stream is higher than the coolant temperature, water will condense along with the VOC. This can cause two problems, corrosion, and low VOC purity.

Condensation units usually achieve a control efficiency of 90 percent. EPA studies indicate that condensation is not economical at low VOC concentrations and that condensation is more capital-intensive than adsorption. The condensation technology is only competitive with adsorption at high VOC concentrations usually around 8,000 ppm. Therefore, the condensation system is not technically feasible to control VOC emissions from the paper machines.

Absorption

Gas absorption is a physical process in which gas is transferred to a liquid stream due to preferential solubility of the gas in the liquid. This method is commonly used for removal of acid stack gases and not for VOC removal. Its relatively complex operation and consequent high cost account for its limited use for VOC removal and recovery. Therefore, the absorption system is not technically feasible to control VOC emissions from the paper machines.

Thermal incineration

Thermal incineration is one of the most widely practiced control technologies for control of VOC emissions. Thermal incineration can be used over a wide, but low range of organic vapor concentration. Thermal incinerators generally require operating temperatures of between 1200°F and 1500°F. To achieve this temperature, it is necessary to preheat the feed stream. Thermal incineration can be applied to low concentration VOC streams and is technically feasible for paper machine sources.

Catalytic Incineration

The primary advantage of catalytic incineration over thermal incineration is that the oxidation process takes place at a lower temperature. Thermal oxidization requires temperatures of roughly 1200°F and 1500°F, whereas catalytic oxidization normally requires temperatures of only 400°F to 900°F. For waste gas streams that do not contain sufficient concentrations of oxidizable compounds to sustain combustion at the high temperatures required for thermal oxidization, an auxiliary fuel must be used to raise the gas stream temperature. The added costs of auxiliary fuel are lower for the catalytic unit because of the lower operating temperature.

The variables that must be determined to optimize each specific application include the catalyst type, the temperature of the catalyst bed, and the gas/catalyst contacting scheme (i.e., fluid bed, fixed bed). These factors must be designed for each application and make catalytic incineration systems less flexible in terms of adapting to changes in VOC composition, flow rate, and/or concentration of VOC in the gas stream. The catalytic beds are susceptible to blinding and poisoning due to PM and chloride compounds in the exhaust streams being treated. Therefore, this technology is not considered technically feasible for paper machine sources.

Step 3: Ranking the Remaining Control Technologies by Control Effectiveness

The thermal incineration system is a technically feasible option to control VOC emissions from the paper machines. The thermal incineration systems have a VOC control efficiency of 99 percent.

Step 4: Evaluating the Most Effective Controls and Documentation

The facility has conducted a cost-effectiveness analysis for the thermal incineration technology in paper machine sources. The cost analysis is included in Tables 29-40 (Please refer to pages 78-89 in the Revised BACT Report) for Paper Machines 1APM to 6APM. The cost-effectiveness analysis is based on an annual VOC emission rate of 132.88 tpy for each paper machine and a control efficiency of 99 percent. The annual VOC emission rate for an individual paper machine was derived from the total allowable emission rate of 938 tpy divided by the six paper machines and an allowance of 15 percent for the converting operation emissions. The cost analysis shows that installing thermal incineration units will cost between $60,000 per ton to $108,000 per ton of pollutant removed. The cost per pollutant removed is high because the concentrations of VOC in the exhaust streams are low.

The RBLC database shows that both the P&G paper making plants (Wisconsin and Missouri) do not have thermal incineration units installed to control VOC emissions. Therefore, the facility concludes that installing a thermal incineration unit is cost prohibitive. The facility concludes that inherent lower-emitting process practice is the most effective control option to control VOC emissions from the paper machines. The facility plans to limit the VOC content of the additives employed in the papermaking process to 3 percent by weight to limit VOC emissions.

Step 5: Selection of BACT

The facility proposes a BACT VOC content limit of 3 percent, by weight, for any materials that are used in the paper machines.

EPD Review – VOC Control

The Division agrees with the facility's BACT VOC content limit based on the review done. The Division has conducted independent research from the RBLC database to determine the BACT control technology for similar sources. The database shows that there are two other similar P&G plants located in Wisconsin and in Missouri. Both of these plants do not have any control devices installed to control VOC emissions. The Missouri plant has a slight more stringent BACT VOC content limit of 2 percent, by weight. The Wisconsin plant does not have any VOC content limit. Therefore, the proposed P&G Albany plant BACT VOC content limit of 3 percent, by weight, seems reasonable. This VOC content limit also came out of the BACT review done in 1998 for Paper Machines 1APM to 6APM.

Conclusion – VOC Control
The BACT selection for the Paper Machines 1APM to 6APM is summarized below in Table 4-5:

Table 4-5: BACT Summary for the Paper Machines 1APM to 6APM

Pollutant	Control Technology	Proposed BACT Limit	Compliance Determination Method
VOC	Inherent lower-emitting process practice (Limiting the content in any material that will be used in Paper Machines 1APM to 6APM to 3 percent VOC, by weight)	3 percent, by weight	Record keeping

5.0 TESTING AND MONITORING REQUIREMENTS

Testing Requirements:

Following completion of the modification of each paper machine, P&G will be required to conduct initial PM performance testing on all of the Paper Machines 1APM through 6APM to provide a reasonable assurance of compliance with the BACT limits in Condition 3.3.26. New Condition 4.2.10 requires P&G to conduct this initial PM testing within 60 days after achieving the maximum production rate at which the modified paper machine will be operated but no later than 180 days after initial startup of each modified paper machine. This condition also specifies that each stack from the paper machine (former, process, repulper, dry end, yankee/predryer burner, and roof exhaust stacks) be tested simultaneously and that only one Roof Exhaust Stack per paper machine be tested as determined by the methods to estimate Roof Exhaust Stack emissions in Condition 4.2.12.

P&G will be required to conduct periodic PM performance testing on Paper Machine 1APM through 6APM to provide a reasonable assurance of compliance with the BACT limits in Condition 3.3.26 and to satisfy the testing requirements of Condition 4.2.1. New Condition 4.2.11 requires P&G to conduct this periodic PM performance testing in accordance with the schedule in Condition 4.2.1 within 60 days after achieving the maximum production rate at which the modified paper machine will be operated but no later than 180 days after initial startup of each modified paper machine. This condition also specifies that each stack from the paper machine (former, process, repulper, dry end, yankee/predryer burner, and roof exhaust stacks) be tested simultaneously and that only one Roof Exhaust Stack per paper machine be tested as determined by the methods to estimate Roof Exhaust Stack emissions in Condition 4.2.12.

P&G will be required to conduct PM performance testing on all of the Roof Exhaust Stacks on two paper machines simultaneously. One paper machine tested must be either 1APM or 2APM while the second paper machine tested must be one of 3APM through 6APM, unless otherwise specified in alternate Division-approved test procedures. New Condition 4.2.12 requires P&G to conduct this PM testing within 60 days after achieving the maximum production rate at which the modified paper machine will be operated but no later than 180 days after initial startup of each modified paper machine. This condition also specifies that the results of this PM testing be used to develop procedures to represent emissions from all Roof Exhaust Stacks by testing a single Roof Exhaust Stack on a respective paper machine.

Following the completion of each Yankee Burner (1AYD, 2AYD, or 3AYD), P&G will be required to conduct initial CO and NO_X performance testing on the respective Yankee Burner to provide a reasonable assurance of compliance with the BACT limits in Condition 3.3.21. New Condition 4.2.13 requires P&G to conduct the initial CO testing within 60 days after achieving the maximum production rate at which the respective Yankee Burner will be operated but no later than 180 days after initial startup of the respective Yankee Burner. New Condition 4.2.14 requires P&G to conduct the initial NO_X testing within 60 days after achieving the maximum production rate at which the respective Yankee Burner will be operated but no later than 180 days after initial startup of the respective Yankee Burner.

Monitoring Requirements:

The facility will be required to perform quarterly monitoring testing for NO_X and CO measurements to demonstrate compliance with the new BACT limits in Condition 3.3.21 for Yankee Burners 1AYD, 2AYD, and 3AYD. NO_X quarterly monitoring for Yankee Burners 2AYD and 3AYD, which is currently required in accordance with Condition 5.2.3, will be used to demonstrate compliance with the new NO_X BACT limit in Condition 3.3.21. Also, CO quarterly monitoring for Yankee Burners 2AYD and 3AYD, which is currently required in accordance with Condition 5.2.4, will be used to demonstrate compliance with the new CO BACT limit in Condition 3.3.21.

For Yankee Burner 1AYD, Conditions 5.2.11 and 5.2.12 have been added to require quarterly monitoring testing for NO_X and CO measurements to demonstrate compliance with the new BACT limits. New Condition 5.2.11 requires measurement of NO_X and oxygen concentrations for Yankee Burner 1AYD according to *ASTM D 6522 – Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable analyzers.* Again, the required frequency of measurement in this condition is once per calendar quarter, which is similar to monitoring currently required for Yankee Burners 2AYD and 3AYD in Condition 5.2.3. This NO_X monitoring will provide reasonable assurance of compliance with the NO_X limit in Condition 3.3.21.

New Condition 5.2.12 requires measurement of CO concentrations for Yankee Burner 1AYD according to *ASTM D 6522 – Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable analyzers.* Again, the required frequency of measurement in this condition is once per calendar quarter, which is similar to monitoring currently required for Yankee Burners 2AYD and 3AYD in Condition 5.2.4. This CO monitoring will provide reasonable assurance of compliance with the CO limit in Condition 3.3.21.

<u>CAM Applicability:</u>

Paper Machines 1APM through 6APM are subject to the requirements of compliance assurance monitoring (CAM) as specified in 40 CFR 64. CAM is only applicable to emission units that 1) are located at a major source, 2) have potential emissions greater than the major source threshold, 3) use a control device to control a pollutant emitted in an amount greater than the major source threshold for that pollutant, and 4) have a specific emission standard for that pollutant.

Each of the Paper Machines 1APM through 6APM has individual pre-control potential PM emissions greater than the major source threshold, each uses at least one control device to control PM emissions, and each is subject to a PM emission standard. Therefore, Paper Machines 1APM through 6APM, individually, are subject to the requirements of CAM. All pieces of equipment subject to CAM are listed in existing Condition 5.2.5.

Paper Machines 1APM through 4APM use Venturi Scrubbers 1AVS through 4AVS to control dry end PM emissions. Each of these paper machines are subject to the respective PM limit set forth in Condition 3.3.5. In accordance with the existing CAM requirements, P&G is required to monitor the water flow rate and differential pressure for the Venturi Scrubbers to ensure proper operation of these air pollution control devices. The CAM requirements for Paper Machines 1APM through 4APM, which have already been incorporated into the Renewal Title V Permit, are set forth in existing Condition 5.2.9.

Paper Machines 5APM and 6APM currently use Venturi Scrubbers 5AVS and 6AVS to control dry end PM emissions and Cyclonic Separators 5ACS and 6ACS to control PM emissions from the wet process, particularly from the former stack of each paper machine. As part of this proposed project, the PM emissions from the Predryer/Yankee Area Exhausts of Paper Machines 5APM and 6APM will be controlled by two new control devices, 5DE2 and 6DE2, which will each have a minimum control efficiency of 90%. Each of these paper machines are subject to the respective PM limit set forth in Condition 3.3.5. In accordance with the existing CAM requirements, P&G is required to monitor the water flow rate and differential pressure for the Venturi Scrubbers and visible emissions for the Cyclonic Separators to ensure proper operation of these air pollution control devices. These CAM requirements for Paper Machines 5APM and 6APM, which have already been incorporated into the Renewal Title V Permit, are set forth in existing Condition 5.2.10. In accordance with new Condition 3.3.27, P&G is required to submit a CAM Plan for the respective new control device, 5DE2 or 6DE2, within 90 days prior to commencement of operation of the respective modified paper machine. The CAM requirements for the new control device will be incorporated into the Title V Permit at that time.

The existing CAM requirements set forth in existing Conditions 5.2.9 and 5.2.10, in conjunction with the incorporation of CAM requirements for the two new control devices 5DE2 and 6DE2, provides sufficient monitoring to ensure that P&G will be able to demonstrate compliance with BACT limits after this proposed project is completed.

6.0 AMBIENT AIR QUALITY REVIEW

An air quality analysis is required to determine the ambient impacts associated with the construction and operation of the proposed modifications. The main purpose of the air quality analysis is to demonstrate that emissions emitted from the proposed modifications, in conjunction with other applicable emissions from existing sources (including secondary emissions from growth associated with the new project), will not cause or contribute to a violation of any applicable National Ambient Air Quality Standard (NAAQS) or PSD increment in a Class I or Class II area. NAAQS exist for NO_2, CO, $PM_{2.5}$, PM_{10}, SO_2, Ozone (O_3), and lead. PSD increments exist for SO_2, NO_2, and PM_{10}.

The proposed project at P&G triggers PSD review for CO, NO_X, PM/PM_{10}, SO_2, and VOC. An air quality analysis was conducted to demonstrate the facility's compliance with the NAAQS and PSD Increment standards for CO, NO_X, PM/PM_{10}, SO_2, and VOC. An additional analysis was conducted to demonstrate compliance with the Georgia air toxics program. This section of the application discusses the air quality analysis requirements, methodologies, and results. Supporting documentation may be found in the Air Quality Dispersion Report of the application and in the additional information packages.

<u>Modeling Requirements</u>

The air quality modeling analysis was conducted in accordance with Appendix W of Title 40 of the Code of Federal Regulations (CFR) §51, *Guideline on Air Quality Models*, and Georgia EPD's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions (Revised).*

The proposed project will cause net emission increases of CO, NO_X, PM/PM_{10}, SO_2, and VOC that are greater than the applicable PSD Significant Emission Rates. Therefore, air dispersion modeling analyses are required to demonstrate compliance with the NAAQS and PSD Increment. VOC does not have an established PSD modeling significance level (MSL) (an ambient concentration expressed in either $\mu g/m^3$ or ppm). Modeling is not required for VOC emissions; however, the project will likely have no impact on ozone attainment in the area based on data from the monitored levels of ozone in Sumter County and the level of emissions increases that will result from the proposed project. The southeast is generally NO_X limited with respect to ground level ozone formation.

<u>Significance Analysis: Ambient Monitoring Requirements and Source Inventories</u>

Initially, a Significance Analysis is conducted to determine if the CO, NO_X, PM/PM_{10}, SO_2, and VOC emissions increases at P&G would significantly impact the area surrounding the facility. Maximum ground-level concentrations are compared to the pollutant-specific U.S. EPA-established monitoring significant level (MSL). The MSL for the pollutants of concern are summarized in Table 6-1.

If a significant impact (i.e., an ambient impact above the MSL) does not result, no further modeling analyses would be conducted for that pollutant for NAAQS or PSD Increment. If a significant impact does result, further refined modeling would be completed to demonstrate that the proposed project would not cause or contribute to a violation of the NAAQS or consume more than the available Class II Increment.

Under current U.S. EPA policies, the maximum impacts due to the emissions increases from a project are also assessed against monitoring *de minimis* levels to determine whether pre-construction monitoring should be considered. These monitoring *de minimis* levels are also listed in Table 6-1. If either the predicted modeled impact from an emission increase or the existing ambient concentration is less than the monitoring *de minimis* concentration, the permitting agency has the discretionary authority to exempt an applicant from pre-construction ambient monitoring. This evaluation is required for CO, NO_X, PM/PM_{10}, and SO_2.

If any off-site pollutant impacts calculated in the Significance Analysis exceed the MSL, a Significant Impact Area (SIA) would be determined. The SIA encompasses a circle centered on the facility with a radius extending out to (1) the farthest location where the emissions increase of a pollutant from the project causes a significant ambient impact, or (2) a distance of 50 km, whichever is less. All sources within a distance of 50 km of the edge of a SIA are assumed to potentially contribute to ground-level concentrations within the SIA and would be evaluated for possible inclusion in the NAAQS and PSD Increment analyses. $PM_{2.5}$ does not yet have established MSLs (3 options proposed on 9/12/07).

Table 6-1: Summary of Modeling Significance Levels

Pollutant	Averaging Period	PSD Significant Impact Level (ug/m^3)	PSD Monitoring De Minimis Concentration (ug/m^3)
PM_{10}	Annual	1	--
	24-Hour	5	10
SO_2	Annual	1	--
	24-Hour	5	13
	3-Hour	25	--
NO_X	Annual	1	14
CO	8-Hour	500	575
	1-Hour	2000	--

<u>NAAQS Analysis</u>

The primary NAAQS are the maximum concentration ceilings, measured in terms of total concentration of pollutant in the atmosphere, which define the "levels of air quality which the U.S. EPA judges are necessary, with an adequate margin of safety, to protect the public health." Secondary NAAQS define the levels that "protect the public welfare from any known or anticipated adverse effects of a pollutant." The primary and secondary NAAQS are listed in Table 6-2 below.

Table 6-2: Summary of National Ambient Air Quality Standards

Pollutant	Averaging Period	NAAQS	
		Primary / Secondary (ug/m^3)	Primary / Secondary (ppm)
PM_{10}	Annual	*Revoked 12/17/06	*Revoked 12/17/06
	24-Hour	150 / 150	--
$PM_{2.5}$	Annual	15 / 15	--
	24-Hour	35 / 35	--
SO_2	Annual	80 / None	0.03 / None
	24-Hour	365 / None	0.14 / None
	3-Hour	None/1300	None / 0.5
NO_X	Annual	100 / 100	0.053 / 0.053
CO	8-Hour	10,000 / None	9 / None
	1-Hour	40,000 / None	35 / None

If the maximum pollutant impact calculated in the Significance Analysis exceeds the MSL at an off-property receptor, a NAAQS analysis is required. The NAAQS analysis would include the potential emissions from all emission units at P&G, except for units that are generally exempt from permitting requirements and are normally operated only in emergency situations. The emissions modeled for this analysis would reflect the results of the BACT analysis for the modified emission unit. Facility emissions would then be combined with the allowable emissions of sources included in the regional source inventory. The resulting impacts, added to appropriate background concentrations, would be assessed against the applicable NAAQS to demonstrate compliance. For an annual average NAAQS analysis, the highest modeled concentration among five consecutive years of meteorological data would be assessed, while the highest second-high impact would be assessed for the short-term averaging periods.

PSD Increment Analysis

The PSD Increments were established to "prevent deterioration" of air quality in certain areas of the country where air quality was better than the NAAQS. To achieve this goal, U.S. EPA established PSD Increments for certain pollutants. The sum of the PSD Increment concentration and a baseline concentration defines a "reduced" ambient standard, either lower than or equal to the NAAQS that must be met in an attainment area. Significant deterioration is said to have occurred if the change in emissions occurring since the baseline date results in an off-property impact greater than the PSD Increment (i.e., the increased emissions "consume" more that the available PSD Increment).

U.S. EPA has established PSD Increments for NO_X, SO_2, and PM_{10}; no increments have been established for CO or $PM_{2.5}$ (however, $PM_{2.5}$ increments are expected to be added soon). The PSD Increments are further broken into Class I, II, and III Increments. P&G is located in a Class II area. The PSD Increments are listed in Table 6-3.

Table 6-3: Summary of PSD Increments

Pollutant	Averaging Period	PSD Increment	
		Class I (ug/m^3)	Class II (ug/m^3)
PM_{10}	Annual	4	17
	24-Hour	8	30
SO_2	Annual	2	20
	24-Hour	5	91
	3-Hour	25	512
NO_X	Annual	2.5	25

To demonstrate compliance with the PSD Increments, the increment-affecting emissions (i.e., all emissions increases or decreases after the appropriate baseline date) from the facility and those sources in the regional inventory would be modeled to demonstrate compliance with the PSD Class II increment for any pollutant greater than the MSL in the Significance Analysis. For an annual average analysis, the highest incremental impact will be used. For a short-term average analysis, the highest second-high impact will be used.

The determination of whether an emissions change at a given source consumes or expands increment is based on the source classification (major or minor) and the time the change occurs in relation to baseline dates. The major source baseline date for NO_X is February 8, 1988, and the major source baseline for SO_2 and PM_{10} is January 5, 1976. Emission changes at major sources that occur after the major source baseline dates affect Increment. In contrast, emission changes at minor sources only affect Increment after the minor source baseline date, which is set at the time when the first PSD application is completed in a given area, usually arranged on a county-by-county basis. The minor source baseline dates have been set for PM_{10} and SO_2 as January 30, 1980, and for NO_2 as April 12, 1991.

Modeling Methodology

Details on the dispersion model, including meteorological data, source data, and receptors can be found in EPD's PSD Dispersion Modeling and Air Toxics Assessment Review in Appendix C of this Preliminary Determination and in the May 29, 2009, update to the permit application.

Modeling Results

Table 6-4 shows that the proposed project will not cause ambient impacts of CO above the appropriate MSLs. Because the emissions increases from the proposed project result in ambient impacts less than the MSLs, no further PSD analyses were conducted for these pollutants. However, ambient impacts above the MSLs were predicted for NO_X for the annual averaging period, PM_{10} for the annual and 24-hour averaging periods, and SO_2 for the annual, 24-hour, and 3-hour averaging periods, requiring NAAQS and Increment analyses be performed for NO_X, PM_{10}, and SO_2.

Table 6-4: Class II Significance Analysis Results – Comparison to MSLs

Pollutant	Averaging Period	Year*	UTM East (km)	UTM North (km)	Maximum Impact (ug/m^3)	MSL (ug/m^3)	Significant?
NO_2	Annual	1991	774183.00	3493976.00	3.8833	1	**Yes**
PM_{10}	Annual	1991	774183.88	3493976.50	6.87863	1	**Yes**
	24-hour	1992	774309.00	3494379.00	25.09675	5	**Yes**
SO_2	Annual	1989	774685.00	3494388.00	2.62977	1	**Yes**
	24-hour	1993	774456.00	3494521.00	37.07957	5	**Yes**
	3-hour	1992	774100.00	3494200.00	59.35167	25	**Yes**
CO	8-hour	1990	774183.00	3493976.00	29.290000	500	No
	1-hour	1990	774100.00	3493900.00	49.979500	2000	No

*Data for worst year provided only.

As indicated in the table above, maximum modeled impacts were below the corresponding MSLs for CO. However, maximum modeled impacts were above the MSLs for NO_X, PM_{10}, and SO_2. Therefore, a Full Impact Analysis was conducted for NO_X for the annual averaging period, PM_{10} for the annual and 24-hour averaging periods, and SO_2 for the annual, 24-hour, and 3-hour averaging periods.

Significant Impact Area

For any off-site pollutant impact calculated in the Significance Analysis that exceeds the MSL, a Significant Impact Area (SIA) must be determined. The SIA encompasses a circle centered on the facility being modeled with a radius extending out to the lesser of either: 1) the farthest location where the emissions increase of a pollutant from the proposed project causes a significant ambient impact, or 2) a distance of 50 kilometers (km). All sources of the pollutants in question within the SIA plus an additional 50 km are assumed to potentially contribute to ground-level concentrations and must be evaluated for possible inclusion in the NAAQS and Increment Analysis.

Based on the results of the Significance Analysis, the distance between the facility and the furthest receptor from the facility that showed a modeled concentration exceeding the corresponding MSL was determined to be less than 2.1 km for PM_{10}, 1.8 km for NO_2, and 3.9 km for SO_2. To be conservative, regional source inventories for the aforementioned three pollutants were prepared for sources located within distances from the mill equivalent to the corresponding SIA plus 50 km: 52.1 km for PM_{10}, 51.8 km for NO_2, and 53.9 km for SO_2.

NAAQS and Increment Modeling

The next step in completing the NAAQS and Increment analyses was the development of a regional source inventory. Nearby sources that have the potential to contribute significantly within the facility's SIA are ideally included in this regional inventory. P&G requested and received an inventory of NAAQS and PSD Increment sources from Georgia EPD. P&G reviewed the data received and calculated the distance from the mill to each facility in the inventory. All sources more than 50 km outside the SIA were excluded.

The distance from the facility of each source listed in the regional inventories was calculated, and all sources located more than 53.9 kilometers from the mill were excluded from the analysis. Additionally, pursuant to the "20D Rule," facilities outside the SIA were also excluded from the inventory if the entire facility's emissions (expressed in tons per year) were less than 20 times the distance (expressed in kilometers) from the facility to the edge of the SIA. In applying the 20D Rule, facilities in close proximity to each other (within approximately 5 kilometers of each other) were considered as one source. Then, any Increment consumers from the provided inventory were added to the permit application forms or other readily available permitting information.

The regional source inventory used in the analysis is included in the permit application and the attached modeling report.

NAAQS Analysis

In the NAAQS analysis, impacts within the facility's SIA due to the potential emissions from all sources at the facility and those sources included in the regional inventory were calculated. Since the modeled ambient air concentrations only reflect impacts from industrial sources, a "background" concentration was added to the modeled concentrations prior to assessing compliance with the NAAQS.

The results of the NAAQS analysis are shown in Table 6-5. For the short-term averaging periods, the impacts are the highest second-high impacts. For the annual averaging period, the impacts are the highest impact. When the total impact at all significant receptors within the SIA are below the corresponding NAAQS, compliance is demonstrated.

Table 6-5: NAAQS Analysis Results

Pollutant	Averaging Period	Year*	UTM East (km)	UTM North (km)	Maximum Impact (ug/m^3)	Background (ug/m^3)	Total Impact (ug/m^3)	NAAQS (ug/m^3)	Exceed NAAQS?
NO_2	Annual	1991	774183	3493976	21.21123	10.53	31.74	100	No
PM_{10}	24-hour	1989	774183	3493976	74.58186	38	112.58	150	No
	Annual	1991	774183	3493976	19.4088	20	39.4088	50	No
SO_2	3-hour	1992	772000	3497200	151.42123	84	235.42	1300	No
	24-hour	1993	772000	3497200	81.07337	26.2	107.27	365	No
	Annual	1991	777400	3494000	122.067	5.2	127.267	80	**Yes**

*Data for worst year provided only.

As indicated in Table 6-5 above, the total modeled impact for SO_2 for the annual averaging period exceeds the corresponding NAAQS. All of the other total modeled impacts at all significant receptors within the SIA are below the corresponding NAAQS.

Similar to the PSD increment analysis, values exceeding the annual SO_2 NAAQS occurred in all five years. However, these exceeding values occurred in a receptor inside another facility, Marine Corps Logistics Base, which is located at the edge of the SO_2 SIA. To determine if those exceeding values occurred because of P&G's project or because of the Marine Corps Logistics Base operations, a second set of AERMOD runs was undertaken for the SO_2 annual period, but turning off Marine Corps' sources, in order to see if the impact caused by the rest of the facilities. The results of these second sets of model runs are shown in Table 6-6.

Table 6-6: Annual SO_2 NAAQS Analysis Results for Second Set of AERMOD Runs

Pollutant	Averaging Period	Year*	UTM East (km)	UTM North (km)	Maximum Impact (ug/m^3)	Background (ug/m^3)	Total Impact (ug/m^3)	NAAQS (ug/m^3)	Exceed NAAQS?
SO_2	Annual	1993	772000	3497200	10.97	5.2	16.17	80	No

*Data for worst year provided only.

As indicated in Table 6-6 above, the total modeled impact for SO_2 for the annual averaging period resulting from the second set of modeling runs is below the corresponding NAAQS. Since this value was obtained by including P&G's sources and all off-site facilities in the inventory except for Marine Corps Logistic Base, it can be concluded that the NAAQS exceeding events were caused by Marine Corps' emissions in their own site and that the contribution of the rest of the facilities is negligible.

Increment Analysis

The modeled impacts from the NAAQS run were evaluated to determine whether compliance with the Increment was demonstrated. The results are presented in Table 6-7.

Table 6-7: Increment Analysis Results

Pollutant	Averaging Period	Year*	UTM East (km)	UTM North (km)	Maximum Impact (ug/m^3)	Increment (ug/m^3)	Exceed Increment?
NO_2	Annual	1991	774100	3494100	2.57159	25	No
PM_{10}	24-hour	1991	775035	3493875	29.1012	30	No
	Annual	1990	774304	3494447	7.83699	17	No
SO_2	3-hour	1991	776000	3497700	82.42931	512	No
	24-hour	1993	772000	3497200	38.73476	91	No
	Annual	1991	777400	3494000	120.4468	20	**Yes**

*Data for worst year provided only

As indicated in Table 6-7 above, the impact for SO_2 for the annual averaging period exceeds the corresponding increment. Table 6-7 also demonstrates that the impacts are below the corresponding increments for NO_2 for the annual averaging period, PM_{10} for the annual and 24-hour averaging periods, and SO_2 for the 24-hour and 3-hour averaging periods even with the conservative modeling assumption that all NAAQS sources were Increment sources.

Similar to the NAAQS analysis, values exceeding the allowable annual SO_2 increment occurred in all five years. However, these exceeding values occurred in a receptor inside another facility, Marine Corps Logistics Base, which is located at the edge of the SO_2 SIA. To determine if those exceeding values occurred because of P&G's project or because of the Marine Corps Logistics Base operations, a second set of AERMOD runs was undertaken for the SO_2 annual period, but turning off Marine Corps' sources, in order to see if the impact caused by the rest of the facilities. The results of these second sets of model runs are shown in Table 6-8.

Table 6-8: Annual SO_2 Increment Analysis Results for Second Set of AERMOD Runs

Pollutant	Averaging Period	Year*	UTM East (km)	UTM North (km)	Maximum Impact (ug/m^3)	Increment (ug/m^3)	Exceed Increment?
SO_2	Annual	1993	772000	3497200	5.05	20	No

*Data for worst year provided only

As indicated in Table 6-8 above, the impact for SO_2 for the annual averaging period resulting from the second set of modeling runs is below the allowable increment. Since this value was obtained by including P&G's sources and all off-site facilities in the inventory except for Marine Corps Logistic Base, it can be concluded that the increment violation is caused by Marine Corps' emissions in their own site and that the contribution of the rest of the facilities is negligible. Hence, it can be concluded that P&G's emissions comply with the PSD Increment standards.

Ambient Monitoring Requirements

The impacts for NO_X, CO, SO_2, and PM_{10} quantified in Table 6-4 of the Class I Significance Analysis are compared to the Monitoring *de minimis* concentrations, shown in Table 6-1, to determine if ambient monitoring requirements need to be considered as part of this permit action. The results are presented in Table 6.9.

Table 6-9: Significance Analysis Results – Comparison to Monitoring *De Minimis* Levels

Pollutant	Averaging Period	Year*	UTM East (km)	UTM North (km)	Monitoring De Minimis Level (ug/m^3)	Modeled Maximum Impact (ug/m^3)	Significant?
NO_2	Annual	1991	774183.00	3493976.00	14	3.8833	No
PM_{10}	24-hour	1992	774309.00	3494379.00	10	25.09675	**Yes**
SO_2	24-hour	1993	774456.00	3494521.00	13	37.07957	**Yes**
CO	8-hour	1990	774183.00	3493976.00	575	29.290000	No

*Data for worst year provided only

The maximum modeled impacts for NO_2 and CO are below the corresponding *de minimis* concentrations; therefore, no pre-construction monitoring is required for these pollutants. Because the maximum modeled impacts for PM_{10} and SO_2 exceed the corresponding monitoring *de minimis* concentrations, preconstruction monitoring would be necessary. However, in lieu of such monitoring effort, existing ambient air data from a representative regional monitoring station can be used. For PM_{10}, such a station is Station 130950007 located in Albany, GA, approximately 2 miles north-northeast of the permitted facility. For SO_2, such stations are Station 132150008 located in Columbus, GA and Station 130210012 located in Macon, GA, which are approximately 83 miles and 93 miles from P&G, respectively. Being operated by GA EPD, the data from these monitoring stations can be considered as contemporaneous, representative, and fulfilling all the QA/QC requirements.

As noted previously, the VOC *de minimis* concentration is mass-based (100 tpy) rather than ambient concentration-based (ppm or $\mu g/m^3$). Projected VOC emissions increases resulting from the proposed modification exceed 100 tpy; however, the current Georgia EPD ozone monitoring network (which includes monitors in Leslie, Georgia, and Columbus, Georgia) will provide sufficient ozone data such that no pre-construction or post-construction ozone monitoring is necessary.

Class I Area Significant Impact Analysis

Federal Class I areas are regions of special national or regional value from a natural, scenic, recreational, or historic perspective. Class I areas are afforded the highest degree of protection among the types of areas classified under the PSD regulations. U.S. EPA has established policies and procedures that generally restrict consideration of impacts of a PSD source on Class I Increments to facilities that are located near a federal Class I area. Historically, a distance of 100 km has been used to define “near”, but more recently, a distance of 200 km has been used for all facilities that do not combust coal.

The four Class I areas within approximately 200 km of P&G are the Okefenokee Swamp National Wildlife Refuge, located approximately 170 km southeast of the facility; the Wolf Island National Wildlife Refuge, located approximately 265 km east of the facility; the St. Marks National Wildlife Refuge, located approximately 163 km south of the facility; and the Bradwell Bay Wilderness Area, located approximately 160 km south-southeast of the facility. The U.S. Fish and Wildlife Service (FWS) is the designated Federal Land Manager (FLM) responsible for oversight of three of these Class I areas: Okefenokee Swamp National Wildlife Refuge, Wolf Island National Wildlife Refuge, and St. Marks National Wildlife Refuge. The National Forest Service (FS) is the designated FLM responsible for oversight of Bradwell Bay Wilderness Area.

A Class I Significant Impact Analysis was conducted using the U.S. EPA-approved version of CALPUFF along with the postprocessors POSTUTIL and CALPOST. Concentrations of SO_2, PM_{10}, and NO_X were modeled and compared to the pollutant-specific Class I modeling Significant Impact Levels (SIL) in order to determine if a Full Class I Increment Analysis would be necessary. The results of the Class I Significant Impact Analysis are presented in Tables 6-10 through 6-13.

Table 6-10: Class I Significance Analysis Results – Comparison to SILs (Okefenokee Class I Area)

Pollutant	Averaging Period	Year	Lambert Conformal Ref. Lat-Long 40°N, 97°W Std. Parallels 33°N & 45°N		Maximum Impact* (ug/m^3)	SIL (ug/m^3)	Significant?
			East (km)	North (km)			
NO_2	Annual	2002	1381.050	-901.320	0.0028	0.1	No
PM_{10}	Annual	2002	1379.770	-903.410	0.0030	0.2	No
	24-hour	2002	1383.610	-897.140	0.097	0.3	No
SO_2	Annual	2002	1379.770	-903.410	0.0022	0.1	No
	24-hour	2002	1384.890	-895.050	0.069	0.2	No
	3-hour	2001	1387.750	-892.700	0.219	1.0	No

*Highest value

Table 6-11: Class I Significance Analysis Results – Comparison to SILs (Wolf Island Class I Area)

Pollutant	Averaging Period	Year	Lambert Conformal Ref. Lat-Long 40°N, 97°W Std. Parallels 33°N & 45°N		Maximum Impact* (ug/m^3)	SIL (ug/m^3)	Significant?
			East (km)	North (km)			
NO_2	Annual	2001	1485.230	-829.190	0.00082	0.1	No
PM_{10}	Annual	2001	1485.390	-830.110	0.0014	0.2	No
	24-hour	2001	1487.430	-832.580	0.034	0.3	No
SO_2	Annual	2001	1485.390	-830.110	0.00082	0.1	No
	24-hour	2003	1489.470	-835.060	0.022	0.2	No
	3-hour	2003	1488.690	-835.190	0.078	1.0	No

*Highest value

Table 6-12: Class I Significance Analysis Results – Comparison to SILs (St. Marks Class I Area)

Pollutant	Averaging Period	Year	Lambert Conformal Ref. Lat-Long 40°N, 97°W Std. Parallels 33°N & 45°N		Maximum Impact* (ug/m^3)	SIL (ug/m^3)	Significant?
			East (km)	North (km)			
NO_2	Annual	2002	1255.510	-1004.310	0.0029	0.1	No
PM_{10}	Annual	2002	1255.510	-1004.310	0.0039	0.2	No
	24-hour	2003	1234.490	-1005.430	0.102	0.3	No
SO_2	Annual	2002	1255.510	-1004.310	0.0026	0.1	No
	24-hour	2001	1247.920	-1008.220	0.060	0.2	No
	3-hour	2003	1234.490	-1005.430	0.228	1.0	No

*Highest value

Table 6-13: Class I Significance Analysis Results – Comparison to SILs (Bradwell Bay Class I Area)

Pollutant	Averaging Period	Year	Lambert Conformal Ref. Lat-Long 40°N, 97°W Std. Parallels 33°N & 45°N		Maximum Impact* (ug/m³)	SIL (ug/m³)	Significant?
			East (km)	North (km)			
NO_2	Annual	2001	1198.350	-1002.950	0.0026	0.1	No
PM_{10}	Annual	2001	1200.610	-1001.700	0.0036	0.2	No
	24-hour	2001	1193.810	-1005-460	0.112	0.3	No
SO_2	Annual	2001	1200.610	-1001.700	0.0024	0.1	No
	24-hour	2001	1198.350	-1002.950	0.089	0.2	No
	3-hour	2002	1202.850	-1006.100	0.209	1.0	No

*Highest value

As indicated in the tables above, maximum modeled impacts were below the corresponding SILs for NO_X, PM_{10}, and SO_2. Therefore, no further Class I Increment Analyses were conducted for these pollutants.

<u>Class I Area Air Quality Related Values (AQRV) Assessment</u>
Air Quality Related Values (AQRV) comprise two types of modeling analyses: Visibility and Deposition of Nitrogen and Sulfur. Both assessments were undertaken using the U.S. EPA-approved version of CALPUFF along with the postprocessors POSTUTIL and CALPOST. In addition, for visibility, the CALPOST postprocessor was set to use the Method 6 visibility calculation as requested in the Draft 2008 Federal Land Managers' Air Quality Related Values Workgroup (FLAG2008). The results of the Class I Visibility and Deposition Analyses are presented in Tables 6-14 and 6-15, respectively.

Table 6-14: Class I Visibility Impacts

Class I Area	Maximum % of Change in Light Extinction*	Days with % of Change >5%*	Year
Okefenokee	1.9	0	2003
Wolf Island	1.1	0	2001
St. Marks	2.5	0	2002
Bradwell Bay	2.5	0	2003

*The percentage of change in light extinction is a measure of the decrease in natural background visibility. The threshold to determine if visibility impairment can be expected is 5% of change in natural background light extinction. With values below 5%, it is expected that visibility impacts will be negligible.

Table 6-15: Class I Deposition of Nitrogen and Sulfur

Class I Area	Deposition Assessment Threshold (DAT)* (kg/ha/yr)	Maximum Nitrogen Deposition (kg/ha/yr)	Maximum Sulfur Deposition (kg/ha/yr)	Year
Okefenokee	0.01	0.0017	0.0019	2002
Wolf Island	0.01	0.0007	0.001	2001
St. Marks	0.01	0.0016	0.0020	2002
Bradwell Bay	0.01	0.0016	0.0019	2001

*The Deposition Assessment Threshold (DAT) is the same for both nitrogen and sulfur.

As indicated in Table 6-14 above, predicted visibility impacts are below the 5% threshold in all the Class I areas. Therefore, no visibility impairment can be expected as a result of the proposed project. As indicated in Table 6-15 above, maximum deposition rates of nitrogen and sulfur in all the Class I areas were below the corresponding Deposition Assessment Thresholds (DAT). Therefore, no negative impacts can be expected as a result of the proposed project.

7.0 ADDITIONAL IMPACT ANALYSES

PSD requires an analysis of impairment to visibility, soils, and vegetation that will occur as a result of a modification to the facility and an analysis of the air quality impact projected for the area as a result of the general commercial, residential, and other growth associated with the proposed project.

<u>Soils and Vegetation</u>

The criteria to assess air pollution impacts on soils, flora, and fauna are the standards contained in the U.S. EPA document "*A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals*". The analysis presented by P&G follows different guidelines and, therefore, additional AERMOD modeling was conducted during Georgia EPD's review process to assess the impact of P&G's emissions plus the regional background concentrations. Emissions from the offsite sources were also included to account for the local background concentration in the same way as was done for the NAAQS assessment.

Of the pollutants required by the aforementioned guidance document, NO_2 and SO_2 were assessed. The rest of the required pollutants were either not emitted by P&G or had concentrations below the significance levels. The impacts of those with concentrations below the significance levels would be negligible. The results are presented in Table 7.1.

Table 7-1: Impacts on Soil, Flora, and Fauna

Pollutant	Averaging Period	Year*	UTM East (km)	UTM North (km)	Maximum Impact (ug/m^3)	Background (ug/m^3)	Total Impact (ug/m^3)	Screening Level (ug/m^3)	Exceed Screening Level?
NO_2	4 hour	1990	774183	3493888	188.32	46.1	234.42	3760	No
	8 hour	1990	774183	3493976	158.91	40.8	199.71	3760	No
	1 month	1989	774183	3493976	41.50	19.2	60.70	564	No
	Annual	1991	774183	3493976	21.21	10.53	31.74	100	No
SO_2	1 hour	1990	778100	3495200	218.68	83.7	302.68	917	No
	3 hour	1992	772000	3497200	151.42	84	235.22	786	No
	Annual	1993	772000	3497200	10.97	5.2	16.17	18	No

*Data for worst year provided only.

<u>Growth</u>

The growth analysis is a projection of the commercial, industrial, and residential growth that may be expected to occur in the significant impact area as direct result of the implementation of the proposed project. In the case of P&G, such project consists of the modification of an existing facility and no new jobs are expected as a result of the project given that the company plans to address the proposed modification with their existing work force. Therefore, no related industrial, commercial, or residential growth is expected to accompany this project. Hence, no growth-related air pollution impacts can be foreseen.

<u>Visibility</u>

There are no sensitive receptors within the SIA. Therefore, no further Class II area visibility analysis is necessary.

Georgia Toxic Air Pollutant Modeling Analysis

Georgia EPD regulates the emissions of toxic air pollutant (TAP) emissions through a program covered by the provisions of *Georgia Rules for Air Quality Control*, 391-3-1-.02(2)(a)3.(ii). A TAP is defined as any substance that may have an adverse effect on public health, excluding any specific substance that is covered by a State or Federal ambient air quality standard. Procedures governing the Georgia EPD's review of TAP emissions as part of air permit reviews are contained in the agency's "*Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions (Revised)*."

Selection of Toxic Air Pollutants for Modeling

For projects with quantifiable increases in TAP emissions, an air dispersion modeling analysis is generally performed to demonstrate that off-property impacts are less than the established Acceptable Ambient Concentration (AAC) values. The TAP evaluated are restricted to those that may increase due to the proposed project. Thus, the TAP analysis would generally be an assessment of off-property impacts due to facility-wide emissions of any TAP emitted by a facility.

There are 21 TAP emitted by P&G. Four of these TAP result from the usage of inks in the paper conversion process and are emitted through the roof exhausters. The remaining 17 of these TAP result from the usage of additives in the paper making process and are emitted through the individual stacks.

Emission rates for each TAP emitted were estimated using mass balances of the raw materials and their compositions while assuming that all toxic constituents are emitted. Details on the emission rate calculations can be found in Attachment H to the May 29, 2009, update to the permit application.

For each TAP identified for further analysis, both the short-term and long-term AAC were calculated following the procedures given in Georgia EPD's *Guideline*. Figure 8-3 of Georgia EPD's *Guideline* contains a flow chart of the process for determining long-term and short-term ambient thresholds. P&G referenced the resources previously detailed to determine the long-term (i.e., annual average) and short-term AAC (i.e., 24-hour or 15-minute). The AACs were verified by the EPD.

Determination of Toxic Air Pollutant Impact

The Georgia EPD *Guideline* recommends a tiered approach to model TAP impacts, beginning with screening analyses using SCREEN3, followed by refined modeling, if necessary, with ISCST3 or ISCLT3. For the refined modeling completed, the infrastructure setup for the SIA analyses was relied upon with appropriate sources added for the TAP modeling. Note that per the Georgia EPD's *Guideline*, downwash was not considered in the TAP assessment.

Initial Screening Analysis Technique

Generally, an initial screening analysis is performed in which the total TAP emission rate is modeled from the stack with the lowest effective release height to obtain the maximum ground level concentration (MGLC). Note the MGLC could occur within the facility boundary for this evaluation method. The individual MGLC is obtained and compared to the smallest AAC. Due to the likelihood that this screening would result in the need for further analysis for most TAP, the analyses were initiated with the secondary screening technique.

Individual emission rates for each release point were calculated according to the nature of the pollutant in the following manner:

- Pollutants emitted from the paper conversion process were distributed evenly among the corresponding roof exhausters.
- Pollutants with volatilization potential emitted from the paper making process were distributed among the individual stacks based on their exhaust flow rate.
- Pollutants with no volatilization potential emitted from the paper making process were distributed among the individual stacks based on the PM_{10} emission rate.

Modeling was conducted separately for each one of these three groups of pollutants using a generic emission rate of 100 g/sec for which a hypothetical predicted concentration was found. The MGLC for each pollutant was then calculated by multiplying the hypothetical predicted concentration by the ratio of the pollutant-specific emission rate to the generic emission rate.

Concentrations of the 21 TAP emitted were modeled using the ISCST3 dispersion model. Modeled concentrations were calculated for annual, 24-hour, and 1-hour averaging periods. The 1-hour results were converted to 15-minute averages for further comparison with the corresponding AACs. The annual and 24-hour modeled concentrations were compared directly to their corresponding AACs. The AACs were calculated for each of the 21 TAP and the applicable time-averaging periods according to Georgia EPD's *Guideline*.

As shown in Table 7-2 below, all MGLCs assess were found to be less than their respective AACs.

Table 7-2: Air Toxics Assessment

Pollutant	Averaging Period	AAC (ug/m^3)	MGLC		Year	Exceed AAC?
			(ug/m^3)	(% of AAC)		
1,3-Dichloro-2-Propanol	24 hour	1.73	0.839	48.47%	1988	No
1,4-Dioxane	15 minute	360	0.0029	0.0008%	1986	No
	24 hour	857	0.0007	0.0001%	1985	No
1-Octanol	24 hour	124	0.268	0.2159%	1988	No
Acrylamide	Annual	00.770	0.006	71.67%	1985	No
Carboxymethylcellulose Sodium	24 hour	24	0.051	0.21%	1985	No
Cetyl Alcohol	24 hour	221	10.961	4.9598%	1988	No
Diethylene Glycol	24 hour	918	3.3.02	0.36%	1988	No
Diethylene Glycol Mono Butyl Ether	24 hour	453	0.550	0.12%	1988	No
Distyryl Bipheynyl	24 hour	273912	1.134	0.0004%	1988	No
Ethylene Oxide	15 minute	901	0.0029	0.0003%	1986	No
	24 hour	4.29	0.0007	0.0166%	1988	No
Formaldehyde	15 minute	245	0.0468	0.0130%	1986	No
	Annual	0.77	0.0012	0.0001%	1985	No
Glyoxal	24 hour	0.24	0.2028	84.4924%	1988	No
Hydrazine	Annual	0.02	0.0001	0.3602%	1985	No
Isopropanol	15 minute	123000	8.7060	0.0071%	1986	No
	24 hour	2333	2.1429	0.0919%	1988	No
Methanol	15 minute	32,800	11.5784	0.0353%	1986	No
	24 hour	619	2.8499	0.4604%	1988	No
Petroleum Distillates	15 minute	180,000	40.0790	0.0223%	1986	No
	24 hour	4762	9.8651	0.21%	1988	No
Sodium Acetate	24 hour	242	0.0007	0.0003%	1985	No
Sodium Chloride	24 hour	207	0.0019	0.0009%	1985	No
Sodium Glycolate	24 hour	463	0.0034	0.0007%	1985	No
Triethanolamine	24 hour	12	6.8563	57.14%	1988	No
Vinyl Alcohol Polymers & Copolymers	24 hour	12	0.1722	1.44%	1985	No

*The Deposition Assessment Threshold (DAT) is the same for both nitrogen and sulfur.

8.0 EXPLANATION OF DRAFT PERMIT CONDITIONS

The permit requirements for this proposed modification are included in draft Permit Amendment No. 2676-095-0071-V-02-1.

Section 1.0: Facility Description

Please refer to Section 2.0 of this Preliminary Determination.

Section 2.0: Requirements Pertaining to the Entire Facility

No conditions in Section 2.0 are being added, deleted or modified as part of this permit action.

Section 3.0: Requirements for Emission Units

Table 3.2a in Condition 3.2.1 is updated to include the new input heat capacities and the fuel types for Yankee Burners 1AYD, 2AYD and 3AYD.

New Condition 3.3.21 requires the facility to comply with the NO_X and CO BACT limits for Yankee Burners 1AYD, 2AYD and 3AYD. This condition becomes applicable upon the completion of the paper machine modification project.

New Condition 3.3.22 requires the facility to combust only natural gas and LFG in Yankee Burners 1AYD, 2AYD and 3AYD. This requirement comes from the facility's BACT review for SO_2 emissions. This condition becomes applicable upon the completion of the paper machine modification project.

New Condition 3.3.23 requires the facility to use good combustion practices and to install low NO_X and CO burners in Yankee Burners 1AYD, 2AYD and 3AYD. This requirement comes from the facility's BACT review for NO_X and CO emissions. This condition becomes applicable upon the completion of the paper machine modification project.

New Condition 3.3.24 comes from existing Condition 3.3.7. Condition 3.3.24 requires the facility to comply with existing NO_X and CO BACT limits for Paper Machine Burners 4AYD, 5APD, 5AYD, 6APD and 6AYD. Please note these BACT limits have been carried over from existing Condition 3.3.7 for Paper Machine Burners 4AYD, 5APD, 5AYD, 6APD and 6AYD, and they came from the PSD review in 1998. This condition becomes applicable upon the completion of this paper machine modification project. The new NO_X and CO BACT limits for Yankee Burners 1AYD, 2AYD and 3AYD are added in Condition 3.3.21.

New Condition 3.3.25 comes from existing Condition 3.3.10. Reference to Yankee Burner 3AYD is removed in this condition as this burner will no longer be able to fire fuel oil. This condition becomes applicable upon the completion of this paper machine modification project.

New Condition 3.3.26 requires the facility to limit PM emissions from each paper machine. This condition comes from existing Condition 3.3.5 and the PM BACT requirements. As part of this modification, the facility will be installing a new repulper stack on each paper machine. The combined PM stack limits for each paper machine will apply to the former, process, repulper, dry end, roof exhaust and yankee/predryer burner stacks. The facility also has requested to include PM emissions from roof exhaust stacks in this condition. This condition becomes applicable upon the completion of this paper machine modification project.

New Condition 3.3.27 requires the facility to submit a CAM Plan for Paper Machine 5APM or 6APM for the respective new control device, 5DE2 or 6DE2, within 90 days prior to commencement of operation of the respective modified paper machine.

New Condition 3.3.28 requires the facility to submit a detailed construction schedule for each Paper Machine, 1APM through 6APM, for the Paper Machine PSD Project within 30 days upon commencement of PSD construction.

New Condition 3.3.29 requires the facility to commence construction of the Paper Machine PSD Project within 18 months of the permit issuance date. This condition also specifies that, unless an approval for extension is granted by the Division, construction approval becomes invalid if construction is not commenced by the permit issuance date or if construction is discontinued for 18 months or more.

New Condition 3.4.6 subjects the Paper Machine Burners 1AYD, 2AYD, 3AYD, 4AYD, 5APD and 6APD to 2.5 percent sulfur, by weight, limit. This is a Georgia Rule (g) limit for fuel burning equipment with a capacity less than 100 mmBtu/hr. This condition becomes applicable upon the completion of this paper machine modification project.

New Condition 3.4.7 subjects the Boilers B001 and B002 and Paper Machine Burners 1APD, 2APD, 3APD, 4APD, 5AYD, and 6AYD to 3 percent sulfur, by weight, limit. This is a Georgia Rule (g) limit for fuel burning equipment with a capacity greater than 100 mmBtu/hr. This condition becomes applicable upon the completion of this paper machine modification project. This condition comes from existing Condition 3.4.4.

<u>Section 4.0: Requirements for Testing</u>

New Condition 4.2.10 requires P&G to conduct initial PM performance testing on all of the Paper Machines 1APM through 6APM following completion of the modification of each paper machine to provide a reasonable assurance of compliance with the BACT limits in Condition 3.3.26. This PM testing must be conducted within 60 days after achieving the maximum production rate at which the modified paper machine will be operated but no later than 180 days after initial startup of each modified paper machine. This condition also specifies that each stack from the paper machine (former, process, repulper, dry end, yankee/predryer burner, and roof exhaust stacks) be tested simultaneously and that only one Roof Exhaust Stack per paper machine be tested as determined by the methods to estimate Roof Exhaust Stack emissions in Condition 4.2.12.

New Condition 4.2.11 requires P&G to conduct periodic PM performance testing on Paper Machine 1APM through 6APM to provide a reasonable assurance of compliance with the BACT limits in Condition 3.3.26 in accordance with the schedule in Condition 4.2.1 within 60 days after achieving the maximum production rate at which the modified paper machine will be operated but no later than 180 days after initial startup of each modified paper machine. This condition also specifies that each stack from the paper machine (former, process, repulper, dry end, yankee/predryer burner, and roof exhaust stacks) be tested simultaneously and that only one Roof Exhaust Stack per paper machine be tested as determined by the methods to estimate Roof Exhaust Stack emissions in Condition 4.2.12.

New Condition 4.2.12 requires P&G to conduct PM testing on all of the Roof Exhaust Stacks on two paper machines simultaneously within 60 days after achieving the maximum production rate at which the modified paper machine will be operated but no later than 180 days after initial startup of each modified paper machine. One paper machine tested must be either 1APM or 2APM while the second paper machine tested must be one of 3APM through 6APM, unless otherwise specified in alternate Division-approved test procedures. This condition also specifies that the results of this PM testing be used to develop procedures to represent emissions from all Roof Exhaust Stacks by testing a single Roof Exhaust Stack on a respective paper machine. These procedures to estimate emissions shall be used with Conditions 4.2.10 and 4.2.11.

New Condition 4.2.13 requires P&G to conduct initial CO testing on Yankee Burner 1AYD, 2AYD, or 3AYD following the completion of the respective Yankee Burner to provide a reasonable assurance of compliance with the BACT limits in Condition 3.3.21. This CO testing must be conducted within 60 days after achieving the maximum production rate at which the respective Yankee Burner will be operated but no later than 180 days after initial startup of the respective Yankee Burner.

New Condition 4.2.14 requires P&G to conduct initial NO_X testing on Yankee Burner 1AYD, 2AYD, or 3AYD following the completion of the respective Yankee Burner to provide a reasonable assurance of compliance with the BACT limits in Condition 3.3.21. This NO_X testing must be conducted within 60 days after achieving the maximum production rate at which the respective Yankee Burner will be operated but no later than 180 days after initial startup of the respective Yankee Burner.

Section 5.0: Requirements for Monitoring

New Condition 5.2.11 requires measurement of NO_X and oxygen concentrations for Yankee Burner 1AYD according to *ASTM D 6522 – Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable analyzers.* Again, the required frequency of measurement in this condition is once per calendar quarter, which is similar to monitoring currently required for Yankee Burners 2AYD and 3AYD in Condition 5.2.3. This NO_X monitoring will provide reasonable assurance of compliance with the NO_X limit in Condition 3.3.21. This condition becomes applicable upon the completion of this paper machine modification project.

Please note NO_X quarterly monitoring for Yankee Burners 2AYD and 3AYD, which is currently required in accordance with Condition 5.2.3, will be used to demonstrate compliance with the new NO_X BACT limit in Condition 3.3.21.

New Condition 5.2.12 requires measurement of CO concentrations for Yankee Burner 1AYD according to *ASTM D 6522 – Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable analyzers.* Again, the required frequency of measurement in this condition is once per calendar quarter, which is similar to monitoring currently required for Yankee Burners 2AYD and 3AYD in Condition 5.2.4. This CO monitoring will provide reasonable assurance of compliance with the CO limit in Condition 3.3.21. This condition becomes applicable upon the completion of this paper machine modification project.

Please note CO quarterly monitoring for Yankee Burners 2AYD and 3AYD, which is currently required in accordance with Condition 5.2.4, will be used to demonstrate compliance with the new CO BACT limit in Condition 3.3.21.

Section 6.0: Other Recordkeeping and Reporting Requirements

Condition 6.1.7.b.i is updated to include the reference to Yankee Burner 1AYD.

Condition 6.1.7.b.ii is updated to exclude the reference to Yankee Burner 3AYD as this burner will only combust natural gas and LPG.

New Condition 6.1.7.b.x requires the facility to report any occurrence when any fuel other than natural gas or LPG is burned in Yankee Burners 1AYD, 2AYD and 3AYD. No other exceedance condition in Section 6 is required for Yankee Burners 1AYD, 2AYD and 3AYD as compliance with the 2.5 percent sulfur limit is assured since these burners can only burn natural gas and/or LPG.

Conditions 6.1.7.c.vi and 6.1.7.c.viii are updated with the correct references to the NO_X and CO permit limits for all the Paper Machine Burners.

New Condition 6.1.7.d.v requires the facility to report if good combustion practices are not followed, in accordance with Condition 3.3.23, to minimize CO and NO_X emissions.

No exceedance condition in Section 6 is required for the Paper Machine Yankee Burners 1AYD, 2AYD and 3AYD as compliance with the 2.5 percent sulfur limit is assured since these burners can only burn natural gas and/or LPG.

New Condition 6.2.16 requires the facility to submit notifications when construction commences on this paper machine project and when this project is fully completed. Each notification is required to be submitted within 30 days of the event. This is a PSD requirement.

Section 7.0: Other Specific Requirements

New Condition 7.14.3 states that existing Conditions 3.3.5, 3.3.7, 3.3.10, and 3.4.4 in Title V Permit No 2676-095-0071-V-02-0 will no longer apply when this paper machine modification project is completed.

APPENDIX A

Draft Revised Title V Operating Permit Amendment
The Procter & Gamble Paper Products Company - Albany
Albany (Dougherty County), Georgia

APPENDIX B

The Procter & Gamble Paper Products Company - Albany
PSD Permit Application and Supporting Data

Contents Include:

1. PSD Permit Application No. 17646, dated August 30, 2007 & updated May 29, 2009

<u>Additional Information Received</u>

2. Class I Area Air Dispersion Model Report, dated March 13, 2008
3. Revised Top-Down BACT Report, dated March 20, 2008
4. Ambient Air Quality Impact Analysis Report, dated March 24, 2008
5. Email for Justification of PM BACT limits, dated March 31, 2008

APPENDIX C

EPD'S PSD Dispersion Modeling and Air Toxics Assessment Review